Surprising New Uses for Rice

f a diabetic's blood sugar drops too far during sleep, the result can be nightmares or night sweats.

Some companies sell pre-bedtime "candy bars" made from cornstarch that are designed to slowly convert carbohydrates into glucose

over a 6-hour period. Recent findings suggest uncooked cornstarch can also reduce the incidence of nighttime hypoglycemia.

Researchers at the U.S. Department of Agriculture have been exploring whether rice starch can be altered to give it slower digesting qualities as well. ARS food scientist Harmeet Guraya, who is at the Southern Regional Research Center in New Orleans, Louisiana, says that a starch with these qualities could have many uses—not just as a tool for glucose control.

"The conversion to glucose can be slowed for all starches, including rice, corn, and potato," says Guraya.
"Our process, which is now in patent review, uses heat and enzymes to modify rice starch so it's slower digesting."

But there may be other uses for this altered starch, Guraya says. It could be used by marathon runners who want a steady flow of fuel to keep up their endurance. He adds that the rice product also seems to have fatreplacing properties.

"While you wouldn't want to freeze it, the product could be very good in fat-free, dairy-free yogurt or sour cream. I can see combining it with proteins and fats to make a drink that converts to glucose more slowly." Guraya says the modified starch's slow-digesting properties have been demonstrated in preliminary laboratory studies but that nutrition researchers would also need to test it. He adds that since the product is



A new modified rice starch could be used as a fat replacer in most nonfrozen dairy products like cheese, milkshakes, yogurt, cream cheese, and whipped cream. (K7515-1)

essentially rice, it could be a wholesome new use for millers' broken rice kernels.

Mary Mead, a registered dietitian working at the University of California's Nutrition Science Department at Berkeley, has been helping diabetics manage their glucose levels for 15 years. A certified diabetes educator, Mead says patients should take a commonsense approach to newly developed foods.

"Generally, most of the carbohy-

drates in foods enter the bloodstream as glucose within 3 to 4 hours after eating," she says. "Being able to control and predict the release of glucose sounds ideal, and progress in this area is exciting. However, we must consider each patient's diabetes management needs, along with product acceptability and cost."

Guraya says he plans to work with commercial firms to enhance this new rice product's potential. He would like to keep all options open as to what applications are developed. With the right collaborator, he says, all of the product's traits could be thoroughly explored.

"Right now we're in an early phase. We see a lot of opportunities—we just have to pursue them," he says. And that could mean more food options to help diabetics keep their blood sugar under control.—By Jill Lee, ARS.

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